

# DeepSVG: A Hierarchical Generative Network for Vector Graphics Animation

Year: 2020 | Citations: 174 | Authors: Alexandre Carlier, Martin Danelljan, Alexandre Alahi, Radu Timofte

---

## Abstract

Scalable Vector Graphics (SVG) are ubiquitous in modern 2D interfaces due to their ability to scale to different resolutions. However, despite the success of deep learning-based models applied to rasterized images, the problem of vector graphics representation learning and generation remains largely unexplored. In this work, we propose a novel hierarchical generative network, called DeepSVG, for complex SVG icons generation and interpolation. Our architecture effectively disentangles high-level shapes from the low-level commands that encode the shape itself. The network directly predicts a set of shapes in a non-autoregressive fashion. We introduce the task of complex SVG icons generation by releasing a new large-scale dataset along with an open-source library for SVG manipulation. We demonstrate that our network learns to accurately reconstruct diverse vector graphics, and can serve as a powerful animation tool by performing interpolations and other latent space operations. Our code is available at this [https URL](https://github.com/alexandrehalal/deep-svg).